



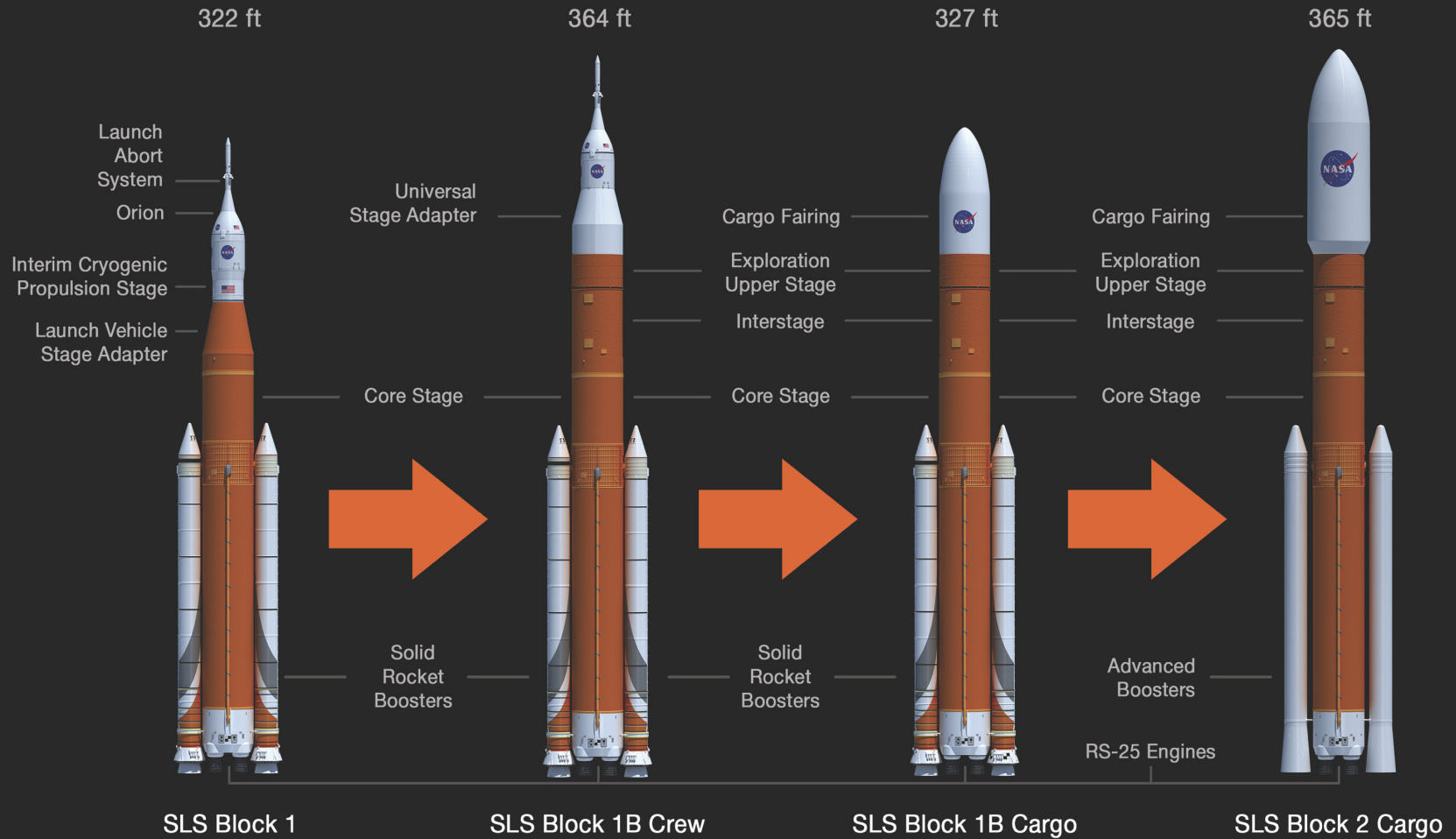
Tech Talk



Configuration Items “An SLS Case Study”

Thad W. Henry, PE
NASA Chief Engineers Office

SLS Top Configuration Item Blocks



10000 (EM-1) Vehicle Integrated Launch System Drawing Tree And Installation Drawing Assignments

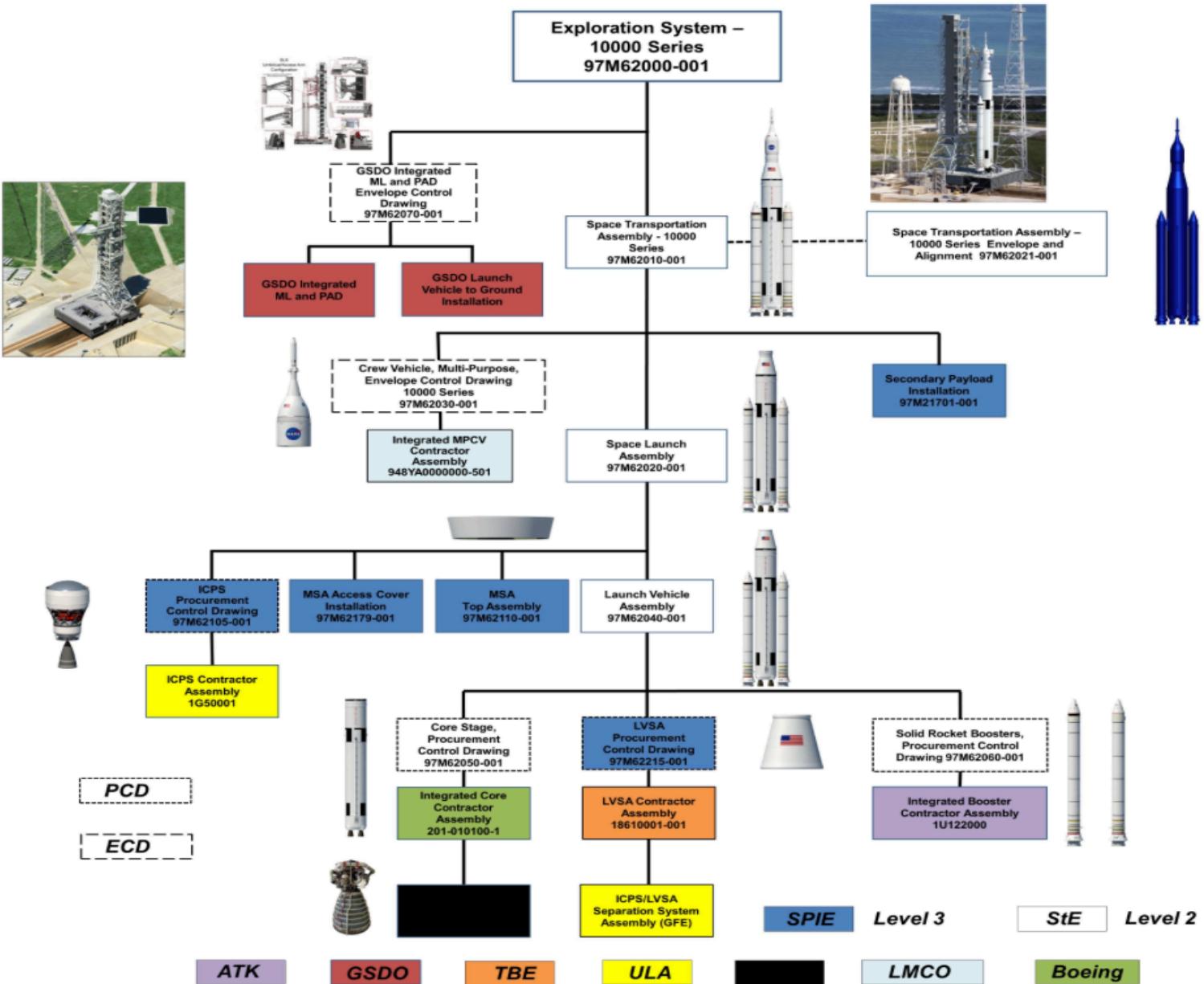


Table C-0. Exploration System (ES) Configurations – Overview

[illegible]

Table C-1. Exploration System (ES) 10000-Series CIs Related to ES Integrated Design Release by SLSP

| CI Name [CI Number] | End Use | Units | NASA B/L Control | Primary Requirements – NASA B/L | Design Activity | Top Assy No.* | CI-Effectivity for Part Release by Design Activity | |
|--|---------|-------|------------------|--|-----------------|---------------|--|---------------|
| | | | | | | | CI No. | Effectivities |
| Exploration System 10000 Series [ES-10000] | Flight | 1 | ESD JICB | 97M62000, Exploration System – 10000 Series 97M62070-001, GSDO Integrated ML and Pad Envelope Control Drawing | MSFC | 97M62000-001 | ES-10000 | 001 |
| ES Space Transportation System [ES-ST-10000] | Flight | 1 | ESD JICB | SLS-SPEC-028, SLSP Integrated Vehicle Structural Design Specification MPCV 70026, Orion MPCV Program to SLS Program Interface Requirements Document (IRD) SLS-ICD-052-01, SLSP-to-GSDOP ICD, Volume 1: Functional Interface Definition & SLSP Integrated Vehicle-to-GSDOP Detailed Design 97M62010, Space Transportation Assembly 97M62021, Integrated Launch Vehicle Assembly Envelope and Alignment Drawing 97M62030, MPCV Procurement Control Drawing 97M62070-001, GSDO Integrated ML and Pad Envelope Control Drawing 97M21701-001, Secondary Payload Deployer Integration | MSFC | 97M62010-001 | ES-10000 | 001 |

Column Descriptions

CI NAME

The descriptive name of the CI. In Tables C-1 and C-2, the CI name matches the nomenclature from the Product Breakdown Structure for the Block 1 SLS System, except that “10000 Series” has been used instead of “Block 1” to be more consistent with the SLS Launch Vehicle assembly drawings nomenclature.. The series designation (e.g., 10000) has been included in the CI name for CIs that are designed specifically for the 10000-series (flight or ground). For CIs that may be utilized in multiple series, the series designation has not been included in the CI Name.

CI NUMBER

The unique number assigned to the CI using the following general format: for vehicle configuration-specific CIs: Program-Vehicle-Configuration-Element-Component-Usage; for multi-vehicle usage CIs: Program-Element-Component-Usage. The CI number will be utilized in the CM accounting database to relate the CI to its baselined documentation, and the CI number is used as the effectivity context when release effectivity is assigned to parts.

END USE

The intended use of the CI – Flight (FLT), Qualification (QUAL), or Ground (other categories can be added).

UNITS

The number of units planned for the 10000 series.

NASA B/L CONTROL

The group that has control authority over the CI requirements in the configuration baselines.

PRIMARY REQUIREMENTS–NASA B/L

A list of the CI’s primary requirements documentation in the configuration baselines.

DESIGN ACTIVITY

The organization that has responsibility for the CI detailed design and administers the release system for the detailed design documentation (drawings, parts lists, CAD models, etc.).

TOP ASSY NO.

The drawing or part number of the top assembly of the CI.

CI-EFFECTIVITY FOR PART RELEASE BY DESIGN ACTIVITY

The effectivity of the part release is made up of the CI and Effectivity identifiers. The CI- effectivity can be used to retrieve the authorized configuration. Authorization for a part to be included in a configuration is done through application of CI-effectivity when the part is released. A part can be assigned multiple effectivities.

CONFIGURATION ITEM (CI) AND EFFECTIVITY LIST (EFFECTIVITY SHEET)

| PROJECT NAME & ACRONYM | DOCUMENT NUMBER | REVISION | DATE | PAGE |
|--|-----------------|----------|---------|--------|
| Space Launch System (SLS) Ground Support Equipment (GSE) | N/A | D | 2/24/17 | 2 OF 5 |

| CI NUMBER OR PROJECT CODE | EFFECTIVITY UNITS OR CODE | TOP ASSEMBLY PART NUMBERS & NAMES | NUMBER OF UNITS & APPLICATION | USAGE/GENERAL DESCRIPTION | DESIGN ACTIVITY | REV OR DATE CHANGED |
|---------------------------|---------------------------|---|-------------------------------|---------------------------------|-----------------|---------------------|
| SLS-GSE-MPC | 0001 | 97M57700-005, PLATFORM ASSEMBLY, MULTI-PURPOSE CARRIER (MPC), TALL LEGS | 2 | SLS CS, CS STA, other as needed | ES21 | C |
| SLS-GSE-MPTS | 0001 | 97M57610-001, STA TO MPTS INSTALLATION, INTERTANK | 1 | SLS CS STA: IT | ES21 | C |
| SLS-GSE-MPTS | 0001 | 97M57613-001, STA TO MPTS INSTALLATION, LH2 | 1 | SLS CS STA: LH2 | ES21 | C |
| SLS-GSE-MPTS | 0001 | 97M57614-001, STA TO MPTS INSTALLATION, LOX | 1 | SLS CS STA: LOX | ES21 | C |
| SLS-GSE-MPTS | 0001 | 97M57615-001, MPTS ASSY, LOCKED | | SLS CS STAs: IT, LH2, LOX | | C |
| SLS-GSE-MPTS | 0001 | 97M57615-003, MPTS ASSY, FREED | | SLS CS STAs: IT, LH2, LOX | | C |
| SLS-GSE-MPTS | 0001 | 97M57810-001, STA TRANSPORTATION BRACKETS, INSTALLATION DRAWING, HIS | 4 | SLS CS STAs: IT, LH2, LOX | ES21 | C |
| SLS-GSE-MPTS | 0001 | 97M57811-001, STA TRANSPORTATION BRACKETS, KIT DRAWING, HIS | 2 | SLS CS STAs: IT, LH2, LOX | ES21 | C |
| SLS-GSE-MPTS-CS | 0001 | 97M57617-001, CS, FWD MPTS | 2 | SLS CS | ES21 | C |
| SLS-GSE-MPTS-CS | 0001 | 97M57618-001, CS, AFT MPTS | 2 | SLS CS | ES21 | C |
| SLS-GSE-MPTS-CS | 0001 | 97M57620, INSTALLATION, CS TO MPTS | | SLS CS | ES21 | C |
| SLS-GSE-SP | 0001 | 97M58257-001, SPIDER ASSEMBLY, FORWARD LIFTING | 2 | SLS CS | ES21 | A |

CI NUMBERS AND NAMES

| | |
|---|---|
| SLS-GSE, SLS GSE General SLS-GSE-ALE, SLS GSE Aft Lifting Equipment SLS-GSE-EB, SLS GSE Engine Section Lifting Beam SLS-GSE-FLE, SLS GSE Forward Lifting Equipment SLS-GSE-ARB, SLS GSE Aft Restraint Bracket | SLS-GSE-MPC, SLS GSE Multi-Purpose Carrier SLS-GSE-MPTS, SLS GSE Multi-Purpose Transportation System SLS-GSE-MPTS, SLS GSE Multi-Purpose Transportation System, Core Stage SLS-GSE-SP, SLS GSE Core Stage Forward Lifting Spider |
|---|---|

ACRONYMS

| | | |
|--|--|--|
| ALE: Aft Lifting Equipment ARB: Aft Restraint Bracket CS: Core Stage EB: Engine Section Lifting Beam ES: Engine Section FLE: Forward Lifting Equipment GSE: Ground Support Equipment | IT: Intertank KSC: Kennedy Space Center LH2: Liquid Hydrogen Tank LOX: Liquid Oxygen Tank MPC: Multi-Purpose Carrier | MPTS: Multi-Purpose Transportation System SP: GSE Lifting Spider SSC: Stennis Space Center STA: Structural Test Article |
|--|--|--|